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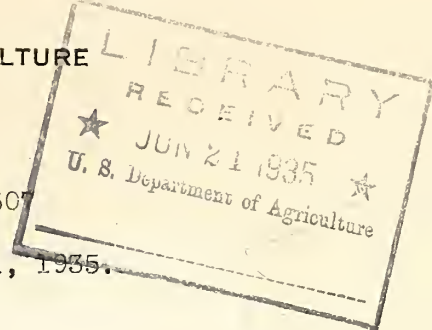


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UNITED STATES DEPARTMENT OF AGRICULTURE  
BUREAU OF ANIMAL INDUSTRY  
WASHINGTON, D. C.

ZD-5.607

May 31, 1935.



Dear

Since the adoption of the proposed National Poultry Improvement Plan by the poultry industry last August several breeders and State poultry leaders have written us suggesting the adoption of a fourth breeding stage based on progeny testing. We appreciate the fact that for several years many of the more successful poultry breeders of the country have based the selection of their breeding stock on the results secured from progeny tests. In other words, they have observed the records made by various families of pullets and have selected males and females for future breeding purposes from the more outstanding families.

Such in reality is the keynote of progeny testing. Males and females are selected from among the progeny of sires and dams that have proved to be of superior breeding worth by the kind of progeny they produce. Progeny testing is nothing new; for many years it has been employed almost exclusively in developing superior strains of plants and most of the outstanding strains of the various breeds of livestock were developed by linebreeding, which is one form of progeny testing. It has long since been established that ancestry and records of production are not enough in the development of a sound breeding program.

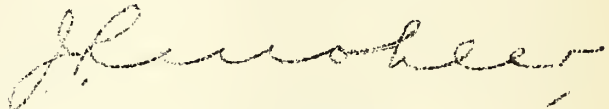
Since there appears to be quite a demand for the incorporation of a progeny-testing stage in the National Poultry Improvement Plan and since we are in sympathy with this idea, we have spent several months in developing a scheme which we feel best fits the need of the poultry-breeding industry. Our ideas are embodied in the suggestions made on the sheets attached to this letter.

The fact will be appreciated that a scheme for the official recognition of males and females of superior breeding worth must be simple in detail and practical in operation if it is to be effective when applied by a large group of poultry breeders. Then again, such a scheme must be relatively inexpensive or it will defeat its own purpose.

Finally, we wish to point out that even if the Register of Merit stage is adopted as a part of the National Poultry Improvement Plan to be put into effect as soon as practicable after July 1 of this year, it would be the spring of 1939 before a Register of Merit male or Register of Merit female could be used as a breeder.

We hope that you will give most serious consideration to the suggestions proposed regarding the Register of Merit stage of poultry breeding work and let us have the benefit of your advice and criticisms. Any scheme that is finally adopted must be acceptable to the majority of poultry breeders.

Very truly yours,

A handwritten signature in dark ink, appearing to read "J. R. Mohler". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

J. R. MOHLER,  
Chief of Bureau.

(Enclosure)

United States Department of Agriculture  
Bureau of Animal Industry  
Animal Husbandry Division

Register of Merit

It is proposed to add to the National Poultry Improvement Plan a fourth stage, to be known as Register of Merit. The Register of Merit stage is a projection of the Record of Performance stage and is designed to give official recognition to males and females that are proved to have superior breeding worth.

The ability to identify males of superior breeding worth is of paramount importance not only to the poultry breeder but to the poultry industry of the country. The ability to identify females of superior breeding worth is important particularly from the standpoint of using them for the production of larger numbers of superior males. Moreover, the ability to identify males and females of inferior breeding worth is also highly desirable in order that they may be eliminated from the breeding pens and thus avoid the chances of increasing the number of inferior progeny.

It is also desirable for the poultry breeder to be able to select R. O. P. cockerels and females to be used as breeders from among the progeny of superior sires and dams. The chances are greater that such cockerels and females will make better breeders than the progeny of inferior sires and dams.

The following are some of the most important characteristics that determine the superior breeding worth of a sire: Good fertility and hatchability of the eggs of the dams to which he is mated; low mortality, good egg production, and good egg weight of his progeny. The superior breeding worth of a dam is determined by good fertility and hatchability; and low mortality, good egg production, and good egg weight in her progeny.

The establishment of minimum standards for each of these characteristics and properly evaluating them in relation to each other are an extremely difficult problem requiring the use of a complicated formula, which is not practical for the average poultry breeder to use in the selection of his breeding stock. Moreover, since minimum standards for egg production and egg weight are presumed to be satisfactorily taken care of in the Record of Performance stage of the National Poultry Improvement Plan, the other characteristics of greatest concern to the poultry breeder are fertility and hatchability of dams and mortality of progeny.

Instead of adopting a complicated formula for the selection of breeding stock based on these characteristics, a simple method is proposed which automatically insures that there must be reasonably good fertility and hatchability and relatively low mortality among the progeny before a sire or dam is considered worthy of Register of Merit recognition. The basis of the official recognition of Register of Merit males and females is simple and practical and is believed to be in the best interests

of the poultry breeding industry.

It is proposed, therefore, officially to recognize Register of Merit (R.O.M.) males and females on the following basis:

A Register of Merit (R.O.M.) male is a R. O. P. male out of a R. O. P. or a R. O. M. mating which, when mated to R. O. P. or R. O. M. females, has at least one-third of his daughters (with a minimum of 20), qualify for R. O. P.

A Register of Merit (R. O. M.) females is a R. O. P. female out of a R. O. P. or R. O. M. mating which, when mated to a R. O. P. or R. O. M. male, has at least one-third of her daughters (with a minimum of 4), qualify for R. O. P.

It is further proposed to recognize officially the following Register of Merit matings:

- A. A Double-Star Register of merit mating is a mating of a R. O. M. male and a R. O. M. female.
- B. A Single-Star Register of Merit mating is a mating consisting of any of the five following combinations:
  1. R. O. M. male x R. O. P. daughters out of a Double-Star R. O. M. mating.
  2. R. O. M. male x females belonging to full-sister families of 4 or more R. O. P. daughters of a R. O. M. female.
  3. R. O. P. male out of Double-Star R. O. M. mating x R. O. M. females.
  4. R. O. P. male that is a member of a full-sister family of 4 or more R. O. P. daughters of a R. O. M. female x R. O. M. females.
  5. R. O. P. male as in nos. 3 or 4 x females as in No. 2.

Perhaps the following set-up will make it easier to understand the different kinds of matings proposed under A and B:

A. (R. O. M. ♂  
(  
(R. O. M. ♀

B. (R. O. M. ♂  
1. ( (R. O. M. ♂  
(R. O. P. ♀ (R. O. M. ♀

2. (R. O. M. ♂  
( (R. O. P. ♂  
(R. O. P. ♀ (R. O. M. ♀

3. (R. O. P. ♂  
( (R. O. M. ♂  
(R. O. M. ♀ (R. O. M. ♀

4. (R. O. P. ♂  
( (R. O. P. ♂  
(R. O. M. ♀ (R. O. M. ♀

5. (R. O. P. ♂ (R. O. P. or R. O. M. ♂  
( (R. O. M. ♀  
( (R. O. P. ♂  
(R. O. P. ♀ (R. O. M. ♀



It is to be noted that the five alternative matings under B provide for the use as breeders of certain males and females before they qualify for Register of Merit. The reason for this is that in actual practice male birds hatched in the spring of 1936 could not qualify for R. O. M. before the fall of 1938 and therefore would be 3 years old by the spring of 1939, when used as R. O. M. breeders. Females hatched in the spring of 1936 could not qualify for R. O. M. before the fall of 1939 and, therefore, would be 4 years old by the spring of 1940, when used as R. O. M. breeders; females entered in R. O. P. work in the fall of 1935 could qualify to be used as R. O. M. breeders by the spring of 1939.

The chicken is a small economic unit and is a short-lived creature as compared with some of the larger classes of livestock. The use of cockerels and R. O. P. yearling females in Register of Merit matings is justified, providing the birds used are selected from among the progeny of superior matings.

The adoption of a Register of Merit stage in the National Poultry Improvement Plan should add practically no expense to the R. O. P. breeder nor to the administration of the plan. On the other hand, the opinion is expressed that until some form of progeny-testing work is given official status the National Poultry Improvement Plan will fall far short of the objective desired by poultry breeders.